

WHAT IS CLAIMED IS:

Sub
A1

1. A navigational device, comprising:
a processor;
a memory in communication with the processor;
a display in communication with the processor;
wherein the device uses the memory in cooperation with the processor to pack a plurality of coordinate data and associate at least a portion of activation data with each coordinate data, each coordinate data having three or more dimensions;
and
wherein at least a portion of the coordinate data is dynamically communicated to the display.
2. The device of claim 1, further comprising an interface device operable to audibly communicate at least a portion of the coordinate data.
3. The device of claim 1, wherein each dimension includes a delta size associated with an optimal size to pack each coordinate data.
4. The device of claim 3, wherein at least one of the coordinate data exceed the delta size associated with packing the at least one coordinate data and wherein associating one or more special data ensures the at least one coordinate data are packed within the delta size associated with the coordinate data.

5. The device of claim 4, wherein:
each dimension is associated with a direction; and
if each direction within each dimension of each associated coordinate data proceeds in a same direction then using a single sign data for each dimension to pack each coordinate data.
6. The device of claim 1, wherein at least one of the dimensions is associated with attribute data relating to at least one of the other dimensions.
7. The device of claim 1, wherein the device is a handheld portable device.
8. The device of claim 1, wherein the memory is remote from the processor.
9. A navigation system, comprising:
a mass storage device adapted to store navigation data;
a server adapted to communicate with the mass storage; and
a navigation device adapted to communicate with and retrieve navigation data from the server via a communication channel, wherein the navigation device includes a processor in communication with a memory, wherein the processor and memory cooperate to pack at least three dimensional data associated with the navigation data and activation data associated with the at least three dimensional data.

10. The system of claim 9, wherein the communication channel includes a wireless channel.
11. The system of claim 9, wherein the activation data are configurable to activate or deactivate each dimension within the at least three dimensional data of the navigation data.
12. The system of claim 11, wherein the navigation data are packed within the memory.
13. Functional data to configure and use attribute data, comprising:
 - activation data operable to activate or deactivate one or more attributes associated with the attribute data;
 - packed data representing compressed activation data and compressed attribute data; and
 - instruction data to decompress the activation data and the attribute data and using the attribute data based on whether one or more of the attributes are activated by the activation data.
14. The functional data of claim 13, wherein the activation data represents at least three dimensions included within the attribute data.
15. The functional data of claim 14, wherein the at least three dimensions include at least one of longitudinal data, latitudinal data, depth data, bottom condition data, altitudinal data, marine data, aeronautical data, and landmark data.

16. The functional data of claim 13, wherein at least a portion of the functional data is processed on a navigational device.

17. The functional data of claim 13, further comprising plotting instruction data operable to interface with the instruction data and plot the attribute data.

18. The functional data of claim 17, wherein the plotting instruction data is further operable to communicate the plotted attribute data with at least one of an audio device and a visual device.

19. The functional data of claim 13, further comprising present location data representing a present position of a navigation device within the attribute data.

20. A method to pack three or more dimensions represented in cartographic data, comprising:

receiving cartographic data including dimension control data operable to represent one or more coordinated data, each coordinate data having three or more dimensional data;

packing each coordinate data and the control data into the cartographic data wherein each dimensional data associated with each coordinate data are compressed into an optimal size; and

using one or more special data to represent at least one dimensional data having a length exceeding the optimal size for the at least one dimensional data permitting the coordinate data to be compressed into the optimal size.

21. The method of claim 20, further comprising selectively decompressing the cartographic data having at least one of the dimensional data based on the dimension control data .
22. The method of claim 21, further comprising plotting the coordinate data.
23. The method of claim 22, wherein the at least three dimensional data represent at least one of longitudinal data, latitudinal data, depth data, bottom condition data, altitudinal data, marine data, aeronautical data, and landmark data.
24. The method of claim 20, wherein the method is used in connection with an electronic navigational aid device.